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Letter dated 29 January 2001 from the Permanent Representative of Indonesia to the United Nations addressed to the Secretary-General

I have the honour to transmit to you the report of the High-Level Regional Meeting on Energy for Sustainable Development of the Economic and Social Commission for Asia and the Pacific, which was hosted by the Government of Indonesia and held in Bali from 21 to 24 November 2000 (see annex).

Considering the importance of the Meeting as part of the regional intersessional activities leading up to the second session of the Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development, to be held from 26 February to 3 March 2001, and the ninth session of the Commission on Sustainable Development, to be held from 16 to 27 April 2001, I should like to request your kind assistance in issuing this letter and its annex as a document of the Commission.

(*Signed*) Makarim **Wibisono**
Ambassador
Permanent Representative

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Annex to the letter dated 29 January 2001 from the Permanent Representative of Indonesia to the United Nations addressed to the Secretary-General

Report of the High-Level Regional Meeting on Energy for Sustainable Development

Bali, Indonesia, 23-24 November 2000

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I. MATTERS CALLING FOR ACTION BY THE COMMISSION OR BROUGHT TO ITS ATTENTION

1. In shifting from agenda to action, the Meeting recognized the need to formulate appropriate policy and regulatory frameworks to build strategic partnerships among stakeholders in meeting the objectives of sustainable energy development.

2. The Meeting underlined the close correlation between access to modern energy, social development and alleviation of poverty. It requested the governments to work for the electrification of rural areas and use all available means to extend energy services to the poor. It recommended that efforts to utilize renewable energy in rural areas should be further strengthened.

3. The Meeting stressed the need for enhanced focus on the introduction of measures to improve the efficiency of current energy production, distribution and consumption, and to support activities in favour of energy efficiency and conservation, including demand-side management.

4. The Meeting stressed that financial assistance from the international community, including private and public funding, was of the utmost importance if the region were to succeed in implementing sustainable energy projects. It noted with appreciation the valuable inputs from the Business Forum, urging the need to ease the way for increased private sector involvement by creating investment-friendly environments. It also noted with appreciation the significant inputs from the NGO Symposium.

5. Recognizing energy pricing as an important economic instrument, the Meeting favoured the views of the Senior Officials that energy-pricing policies be structured to support sustainable energy development by creating a level playing field for renewable energy and energy-efficient technologies. However, it recognized the need to remove energy subsidies gradually.

6. The Meeting adopted, with minor amendments, the Sustainable Energy Development Action Programme, Strategies and Implementation Modalities for the Asian and Pacific Region, 2001-2005, as contained in document E/ESCAP/MESD/2 (see annex I).

7. The Meeting emphasized that the Action Programme should be implemented effectively and in that regard member countries and international organizations, civil societies, business committees and other stakeholders would enhance their concerted efforts to achieve the goal of sustainable energy development.

8. The Meeting requested international organizations and other entities to assist countries of the region in their capacity-building and in facilitating technology transfer in implementing sustainable energy activities.

9. The Meeting adopted, with minor amendments, the Bali Declaration on Asia-Pacific Perspectives on Energy and Sustainable Development, for submission to the Commission on Sustainable Development at its ninth session in 2001 as contained in document E/ESCAP/MESD/3 (see annex II).

10. The Meeting emphasized that the Declaration would serve as a guide and mandate for all stakeholders to take a bold step towards a sustainable energy future. It requested the Executive Secretary of ESCAP and the Chairperson of the High-level Regional Meeting to bring the Declaration as a regional input for the consideration of the Commission on Sustainable Development at its ninth session to be held in April 2001.

II. PROCEEDINGS OF THE MEETING

A. Regional perspective on energy and sustainable development for Asia and the Pacific into the twenty-first century

(Item 4 of the agenda)

11. The Chairperson of the Preparatory Meeting of Senior Officials, held on 21 and 22 November 2000, presented the report of the Meeting (E/ESCAP/MESD/1), highlighting its main conclusions and recommendations. The Preparatory Meeting called upon the High-level Meeting to adopt the draft sustainable energy development action programme, strategies and implementation modalities for the Asian and Pacific region, 2001-2005 (E/ESCAP/MESD/2), and the draft Bali declaration on Asia-Pacific perspectives on energy and sustainable development, for submission to the Commission on Sustainable Development at its ninth session in 2001 (E/ESCAP/MESD/3).

12. The Preparatory Meeting also brought the following to the attention of the High-level Meeting: the need to strengthen efforts towards the promotion of sustainable energy development and to identify concrete measures to mobilize financial resources; the recommendation that prices, including subsidies, should be structured to support sustainable energy development; the need for capacity-building in enhancing utilization of renewable energy and conducting research and development activities; the recommendation that the dialogue in support of technology transfer should be strengthened; the significance of cross-cutting issues to the Asian and Pacific region; and the importance of cooperation in general and among developing countries in particular.

13. The Meeting expressed appreciation of the excellent work undertaken by the Preparatory Meeting of Senior Officials in making a careful review and comprehensive assessment of the documents, and for making available the report of the Meeting.

14. The Meeting noted with appreciation the main outcomes of the NGO Symposium on Regional Perspectives and Initiatives on Achieving a Sustainable Energy Future for All, which was held on 21 and 22 November 2000 and attended by more than 50 representatives of non-governmental and non-commercial organizations. The NGO representative emphasized the vital role that NGOs played in the energy activities of almost all countries. In the NGO perspective, the cleanest possible energy should be accessible to all at affordable prices and on an equitable basis to achieve social and environmental goals. Each country should initiate a political process that established quantitative targets for energy production from renewable energy resources. NGOs also called for greater empowerment of underrepresented sectors of civil society in public sector decision-making, including energy policy formulation. The participants in the NGO Symposium recommended the establishment of a network for sustainable energy development. Sustainable energy projects should be developed for active NGO participation, for which adequate financial support should be provided from public funds and international donor support. The NGO representative drew the attention of delegations to the NGO position paper in which further details of the NGO perspectives were provided.

15. The Business Forum, held on 23 November 2000, in its statement to the Meeting, brought the following key recommendations to the attention of the governments of the Asian and Pacific region: (a) energy sector policies should be implemented to increase competition; (b) policy frameworks should be provided to enable risk-sharing between the host country and investors; (c) transparent fully cost-reflective pricing of energy should be secured, and subsidies targeted precisely to reach those for whom they were intended; (d) the initial phase of renewable energy

projects should be assisted in remote areas and then market mechanisms be allowed to cover maintenance and operation costs; (e) enhanced regional cooperation should be promoted to share experiences; and (f) the potential scope of increased energy efficiency to achieve sustainable development objectives should be acknowledged.

16. The Meeting also noted the policy statements made by the following intergovernmental organizations: ASEAN Centre for Energy, Mekong River Commission Secretariat; United Nations Educational, Scientific and Cultural Organization, United Nations Industrial Development Organization and G8 Renewable Energy Task Force.

17. The Meeting expressed deep appreciation to all the representatives who had taken the floor in the deliberations on that agenda item. It also took note with much interest of the presentations made by the chairpersons of the Preparatory Meeting of the Senior Officials on Energy for Sustainable Development, the NGO Symposium, and the Business Forum. It noted with appreciation the country policy statements delivered by the representatives and the presentations of the international and intergovernmental organizations.

18. The policy statements made by the country representatives highlighted their national policies and strategies towards promoting sustainable energy. Participating countries from the European Union also presented the European position on global action in view of the ninth session of the Commission on Sustainable Development.

19. The Meeting welcomed the strong indications of full commitment to the principles of energy for sustainable development by the countries of Asia and the Pacific. It noted that many countries were taking policies and measures towards promoting sustainable energy development and its linkage with other economic policies. Most importantly, it noted their commitment to do even more.

20. The Meeting noted that several countries sought enhanced international cooperation, financing and technical assistance. It noted that energy demand in the region would grow at a high rate as the per capita consumption base was currently very low. With the aim of employing a policy of using energy in an environmentally friendly way, there was a need to undertake various measures, such as fuel-switching, energy efficiency, technological improvement etc.

21. The Meeting appreciated the efforts of the countries in reforming the energy sector to encourage private sector participation. It stressed the need to realize the potential for cooperation among developing countries, particularly in the exchange of information, experience and expertise. In that respect, it noted with appreciation the offers made by some countries to assist interested countries in various ways.

B. Statement on a regional action programme and regional perspectives on energy and sustainable development

(Item 5 of the agenda)

22. The Meeting considered the draft sustainable energy development action programme, strategies and implementation modalities for the Asian and Pacific region, as contained in document E/ESCAP/MESD/2. Noting that the Preparatory Meeting of Senior Officials had reviewed, refined and endorsed the document for the consideration of the High-level Officials, the Meeting adopted, with minor amendments, the Sustainable Energy Development Action Programme, Strategies and Implementation Modalities for the Asian and Pacific Region, 2001-2005 (see annex I).

23. The Meeting emphasized that all concerned should play their respective roles in implementing the Action Programme. It urged the international community to assist the region in the implementation process by supporting activities in capacity-building, facilitating the transfer of technologies, and providing financial assistance.

24. The Meeting considered and adopted, with minor amendments, the Bali Declaration on Asia-Pacific Perspectives on Energy and Sustainable Development, for submission to the Commission on Sustainable Development, at its ninth session in 2001, as contained in document E/ESCAP/MESD/3 (see annex II). It attached great importance to the Declaration as a guide and mandate for action at the national, subregional, regional and international levels.

III. ORGANIZATION OF THE MEETING

A. Opening, duration and organization of the Meeting

25. The High-level Regional Meeting on Energy for Sustainable Development was held in Bali, Indonesia, on 23 and 24 November 2000.

26. The Minister of Energy and Mineral Resources, HE Mr Purnomo Yusgiantoro, welcomed the guests and representatives to the High-level Regional Meeting. He noted that the Government of

socio-economic growth and development as well as for protection against environmental degradation. He also noted that the Meeting was timely for instigating a new vision for international cooperation on energy and sustainable development to fulfil long-term energy needs. He also noted the high-level participation in the Business Forum organized jointly by the Governments of Indonesia and Australia, as well as in the NGO Symposium organized by ESCAP. He expressed the hope that those events had provided opportunities for stakeholders in the energy sector to interact. In concluding, he expressed confidence that the High-level Meeting would meet its objective.

27. The Secretary-General of the United Nations, in his message delivered by the Executive Secretary of ESCAP, stressed the need for financing. He also underlined the close correlation between development, poverty alleviation and access to energy. He therefore advocated the need to bring adequate, affordable and reliable energy services to people living in poverty. Recognizing that the Asian and Pacific region would continue to face increasing demand for energy for its economic growth, he cautioned that a sustainable path of development must be found through an appropriate mix of fuels, changes in production and consumption patterns, and policies to minimize the environmental impact. Noting that partnership would be crucial, he expressed satisfaction that energy policy makers, business communities and NGOs of the region had gathered in Bali to discuss the issues concerned and to adopt a regional action programme.

28. In his opening statement, the Executive Secretary of ESCAP welcomed the delegations to the Meeting. He expressed deep gratitude to the Government of Indonesia for its support and warm hospitality. Noting that energy was one of the main drivers of socio-economic development, he cautioned that if the current pattern was allowed to continue, energy production and consumption would have a tremendous detrimental impact on the environment. He noted that the challenges were enormous but expressed the hope that, through concerted individual and collective efforts in search of a sustainable energy future, it would be possible to ensure the needed energy services, while minimizing the financial, environmental and social costs. He called upon all stakeholders to work together to establish policies and strategies and implement them.

29. The Director of the Sustainable Development Division of the United Nations Department of Economic and Social Affairs also delivered a statement, expressing gratitude to the Government of Indonesia and all representatives for demonstrating goodwill and commitment to sustainable energy development. Noting that energy was at the core of environment and development, she stressed the need to take a sustainable approach to meet energy needs. The Asian and Pacific region, with its unique characteristics of encompassing both rapidly industrializing and developing countries, had the prospect of becoming a world leader in addressing regional and global environmental problems. She also noted the importance of regional inputs into the ninth session of the Commission on Sustainable Development, and that the input from the Asian and Pacific region could make a substantial impact at the global level.

30. The Vice-President of the Republic of Indonesia, HE Ms Megawati Soekarnoputri, in her inaugural address, welcomed the delegations attending the Meeting. Indonesia, like many other countries in the world, was aware of the magnitude of the role of energy in the socio-economic life of the people. Within the context of sustainable development, she emphasized the importance of developing policies which must be effective, efficient and environmentally friendly. While developing such policies was not easy, the policies were needed to address poverty alleviation, as the majority of humankind whose needs for energy had not been adequately met lived in the ESCAP member countries. However, the Vice-President assured the Meeting that Indonesia would continue to develop by making use of energy in a long-lasting and sustainable manner through enhancing its capacity to utilize energy in line with endeavours to preserve the environment. She expressed her fervent hope that the High-level Meeting would identify further steps to translate strategies into programmes which needed to be taken to advance and enhance intergovernmental cooperation as well as the partnership between the public sector and the private sector, at both the bilateral and regional levels. In concluding, she conveyed her appreciation to all, including ESCAP, the United Nations Department of Economic and Social Affairs, and the Governor of Bali, who had assisted in convening the Meeting. She was confident that the Meeting would succeed in bringing about useful results for cooperation and implementation at the national, regional and global levels.

B. Attendance

31. The High-level Meeting on Energy for Sustainable Development was attended by the following members and associate members of ESCAP: Armenia, Australia, Bangladesh, Brunei Darussalam, Cambodia, China, Cook Islands, Democratic People's Republic of Korea, Fiji, France, India, Indonesia, Islamic Republic of Iran, Japan, Kiribati, Kyrgyzstan, Lao People's Democratic Republic, Malaysia, Marshall Islands, Mongolia, Myanmar, Nepal, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Sri Lanka, Tajikistan, Thailand, Tonga, Turkey and Viet Nam.

32. The representatives of the following other states also attended: Denmark, Libyan Arab Jamahiriya, Morocco, South Africa, Sweden and Switzerland.

33. The following United Nations bodies and specialized agencies were represented: United Nations Department of Economic and Social Affairs, Regional Commissions New York Office, United Nations Environment Programme, United Nations Educational, Scientific and Cultural Organization, International Bank for Reconstruction and Development and United Nations Industrial Development Organization.

34. Representatives of the following intergovernmental organizations attended: ASEAN Centre for Energy, Asian Development Bank, Forum Secretariat and Mekong River Commission Secretariat.

35. Representatives of the following non-governmental organizations, other entities, and observers also attended: Adelaide University, All India Women's Conference, Asian Institute of Technology, Electricity Generating Public Company Ltd. (Thailand), Energy Conservation Center, Japan, Foundation EDP (Viet Nam), G8 Renewable Energy Task Force, Hankuk University of Foreign Studies, Himalayan Light Foundation, India Oil and Natural Gas Corporation Limited, International Federation of Business and Professional Women, International Institute for Energy Conservation, Japan International Cooperation Agency, New Energy and Industrial Technology Development Organization, PELANGI Indonesia, People Centered Business and Economic Institute, PYMBLE (Australia), Resource Development Ltd. (New Zealand), UNCSD NGO Caucus on Energy and Climate Change and World Confederation of Labour.

C. Election of officers

36. The Meeting elected HE Mr Purnomo Yusgiantoro (Indonesia) Chairperson, Hon. Warren Entsch (Australia), HE Mr Ith Praing (Cambodia), HE Mr Habiballah Bitaraf (Islamic Republic of Iran), HE Bountiem Phissamay (Lao People's Democratic Republic), HE Mr Ulambayar (Mongolia), HE Brigadier General Lun Thi (Myanmar), Hon. Ben-Hur C. Salcedo (Philippines), HE Mr Savit Bhotiwihok (Thailand), HE Mr Hoang Trung Hai (Viet Nam), Vice-Chairpersons, and Ms Apisake Soakai (Tonga), Rapporteur.

D. Agenda

37. The Meeting adopted the following agenda:

1. Opening of the Meeting.
2. Election of officers.
3. Adoption of the agenda.
4. Regional perspective on energy and sustainable development for Asia and the Pacific into the twenty-first century.
5. Statement on a regional action programme and regional perspectives on energy and sustainable development.
6. Other matters.
7. Adoption of the report.

E. Other matters (Item 6 of the agenda)

38. The Meeting expressed deep appreciation to the Government of Indonesia for hosting the High-level Meeting on Energy for Sustainable Development. It also extended its thanks to the National Organizing Committee in Bali and in Jakarta for providing excellent host facilities and generous hospitality.

39. The Pacific island developing states expressed their concern over the lack or inadequate level of representation in international forums as a result of insufficient support or late information. They requested assistance in enhancing financial support as well as in capacity-building to enhance their absorptive capacity in implementing the Regional Action Programme just adopted.

F. Adoption of the report

(Item 7 of the agenda)

40. The High-level Meeting on Energy for Sustainable Development adopted its report on 24 November 2000.

ANNEXES

Annex I

SUSTAINABLE ENERGY DEVELOPMENT ACTION PROGRAMME, STRATEGIES AND IMPLEMENTATION MODALITIES FOR THE ASIAN AND PACIFIC REGION, 2001-2005

SUMMARY

A number of critical issues of major concern to the region were identified at the High-level Regional Meeting on Energy for Sustainable Development held in Bali, Indonesia from 21 to 24 November 2000. Taking these critical issues into consideration as well as the Regional Action Programme for Environmentally Sound and Sustainable Development, 2001-2005 adopted by Ministers attending the Ministerial Conference on Environment and Development in Asia and the Pacific, 2000 in Kitakyushu, Japan, on 4 and 5 September 2000, the present document proposes specific activities, strategies and implementation modalities to be undertaken in order to attain a sustainable energy development path.

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INTRODUCTION

1. Policies and programmes of sustainable development were initiated in various countries by national and international organizations following the United Nations Conference on the Human Environment, held in Stockholm in 1972. The efforts were intensified after the historic Agenda 21 was adopted as the blueprint for sustainable development at the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992. Sustainable energy development has been at the core of many of these programmes, as energy production and consumption activities are closely linked with issues of sustainable development. Sustainable development efforts are directed mainly towards social aspects, such as poverty alleviation and environmental protection. Accessibility to commercial energy[1] supply is essential for any programme of alleviating poverty through the provision of basic minimum human needs or increasing employment opportunities. The increasing production of energy should, however, be effected in ways that are both economically and ecologically sound. Sustainable energy development programmes were designed in consonance with these objectives. While significant progress has been made in some countries of the Asian and Pacific region, there are wide gaps in most countries between intention and action, and between action and achievement. This paper seeks to review briefly what has been done already and ways in which sustainable energy development efforts can be accelerated.

2. The broad reasons for the unsatisfactory outcome of sustainable energy development efforts have been identified as the following:

(a) Since 1972, economic development has been significant in the region, but attempts to integrate environmental and social considerations into economic decision-making in many sectors of the economy have not been successful;

(b) Poverty alleviation and promotion of equity issues have not been considered in decisions in the energy and environment sectors in some countries;

(c) Regulatory intervention in many countries has not provided undistorted price signals. In some countries, efforts of regulators to mix the control instruments with market-based instruments have not been very successful;

(d) Funding of sustainable energy projects and programmes has been inadequate and continues to be based on traditional concepts of financial prudence. Innovative methods of financing have yet to be developed in most countries to promote investment in renewable energy projects and energy research and development programmes;

(e) Institutional changes have been marginal and institutions have largely failed to enlist the support of civil society, particularly local-level communities, which could and should have become the agent of change through participation in policy-making through advocacy and in implementation through partnerships;

(f) International and regional cooperation is still inadequate in the energy sector, although some concrete action has been taken in the subregional groupings.

3. Actions taken at the national and regional levels in respect of sustainable development have been reviewed on several occasions in ESCAP and in other forums. One such comprehensive attempt was the Regional Action Programme for Environmentally Sound and Sustainable Development, 1996-2000, adopted at the third Ministerial Conference on Environment and Development in Asia and the Pacific, held in 1995. This was reviewed at several expert group meetings and was further examined recently at the Preparatory Meeting of Senior Officials for the Ministerial Conference on

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[1] All forms of energy, including some biomass fuel, which are traded in the market.

Environment and Development, 2000, held in Kitakyushu, Japan, from 31 August to 2 September 2000.

4. The preparatory meeting in Kitakyushu reviewed the implementation experience of Agenda 21 and the Regional Action Programme for 1996-2000 and came to the following conclusions:

(a) The regional action programme for 1996-2000 had identified 24 programmes for priority action. Fewer, more targeted, achievable programmes should be adopted in future;

(b) An action plan should include practical mechanisms for implementation;

(c) In the region, the inadequate increase in official development assistance (ODA) had been compensated to some extent by an increase in private capital flows. However, private sector finance was not a full substitute for ODA as private sector funding failed to internalize externalities;

(d) All countries must be persuaded to accept and act on the view that the overarching need for poverty alleviation was a fundamental prerequisite to sustainable development that had not been accepted in practice in many countries;

(e) There was a need to intensify efforts to increase the degree of public access to information on sustainable development.

5. Based on these lessons learned and having considered the current and emerging critical issues, the Regional Action Programme for Environmentally Sound and Sustainable Development, 2001-2005 was discussed and adopted at the Ministerial Conference, held in Kitakyushu on 4 and 5 September 2000. It listed the following eight programmes areas:

(a) Environmental quality and human health;

(b) Biodiversity;

(c) Coastal and marine environments;

(d) Freshwater resources;

(e) Desertification and land degradation;

(f) Globalization and policy integration;

(g) Climate change;

(h) Sustainable energy development.

Although sustainable energy development is listed as a specific programme area, energy-related actions, policies and programmes are also included in the other relevant programme areas.

6. At the Preparatory Meeting, it was noted that an increase in demand for energy was inescapable in view of the high economic growth prospects in the countries of the ESCAP region but that such increase in energy demand had to be met by a choice of fuels and technologies which would keep the negative environmental impact to the minimum possible level. The need to refine energy environment policies with a clear focus on poverty alleviation was emphasized. In keeping with those ideas, a mission statement was developed.

I. MISSION STATEMENT FOR SUSTAINABLE ENERGY DEVELOPMENT

7. The mission statement for sustainable energy development incorporated in the regional action programme for 2001-2005, reads "to enhance the capacity of concerned stakeholders in developing sustainable energy development strategies under which energy services can be expanded and

improved with a minimum compromise on environmental quality." Due weightage must be given in focusing on poverty alleviation, equity and social justice.

II. AREAS FOR ACTION

8. In the programme area on sustainable energy development of the Regional Action Programme for 2001-2005, the following areas for action have been identified:

(a) Developing policies to promote energy utilization for poverty alleviation by ensuring energy availability at affordable prices;

(b) Strengthening planning capacity on sustainable energy development by establishing clear linkages to other sectors;

(c) Promoting implementation of a supply- and demand-side energy efficiency programme in the region;

(d) Promoting the application of renewable and clean energy technologies in the region;

(e) Promoting and assisting a dedicated global project to create 100 per cent renewable energy in the small island developing states of the region;

(f) Mobilizing financial resources from traditional sources and the private sector.

9. Those areas of action are discussed below with the short-term and long-term activities that could be undertaken in each of them.

A. Strengthening planning capacity in sustainable energy development by establishing clear linkages to other sectors

10. After the Rio Conference in 1992, ESCAP took several initiatives to promote the incorporation of environmental protection concerns in energy planning. Such planning exercises have become more complex due to liberalization, which has reduced the importance given to overall economic planning. Furthermore, the international energy price has become volatile and unpredictable. Nonetheless, in spite of the growing complexity, the need to have a long-term sustainable energy development plan with adequate understanding of the environmental and equity issue is becoming critical.

11. In the short term, the activities to be taken up include the following:

(a) Database development and maintenance should be pursued through systematic collection of data relating to energy potential, consumption patterns and levels, and environmental pollution. Arrangements for this should be made, not only through government sources but by enlisting the cooperation of civil society. This activity would require a substantial amount of human and financial resources and needs to be designed on a long-term basis;

(b) The awareness and understanding of civil society on the linkages between energy and other economic and social sectors should be enhanced. Discussions through a variety of media on issues related to sustainable energy in various sectors will have to be arranged periodically to disseminate information and to increase awareness, understanding and commitment;

(c) The key sectors or geographical areas where there is immediate scope for action on sustainable energy development should be identified with the cooperation of the agencies of civil society;

(d) Special consideration should be given to disadvantaged groups of society, for the equitable distribution of energy.

12. As a long-term activity, the necessary legal and institutional arrangements should be designed and set up to support sustainable energy development, including research, development and demonstration of innovations in technology and institutional arrangements.

B. Developing policies to promote energy utilization for poverty alleviation

13. There is a vicious circle in which lack of required energy in terms of quality and quantity leads to poverty, which in turn leads to a reduction in or even denial of access to existing sources of energy, leading to greater poverty. It is recognized that, of around 2.0 billion people in the world who are deprived of the minimum needs of energy, a majority live in the ESCAP region.

14. The poor in both rural and urban areas face different kinds of energy deprivation. In most urban areas, the distribution networks have been established in respect of electricity as well as kerosene and liquefied petroleum gas, but access to electricity in particular is made difficult by poverty.

15. In rural areas in many developing countries, the electricity networks have not been extended. The petroleum product distribution networks established by the oil companies do not extend to rural areas in many countries. A number of intermediaries work in sequence to bring the supply to the rural poor and, ultimately, the poor in the rural areas pay more for their fuel needs than their city counterparts.

16. To remedy this situation in the short run, it is necessary to carry out the following measures:

(a) To develop policies which enable the generation of small-scale power and the extension of the electricity grid and supply systems for kerosene or clean biofuels to areas where the rural poor live;

(b) To simplify procedures to enable the poor to receive the basic requirement of electricity and kerosene;

(c) To subsidize the lifeline supply of energy to the poor by treating the environment and distribution infrastructure as a "sunk cost" (investment for general socio-economic development) and not counting it when the retail energy price is being fixed;

(d) To promote decentralized management of energy systems based on purchasing bulk power from the grid and distributing it in small rural habitations, using locally available labour and entrepreneurship;

(e) To promote, wherever possible, decentralized power generation projects based on biomass or other renewable energy resources which can increase employment opportunities for the rural poor through public-private cooperation. A capital (one-time) subsidy could be given based on the remoteness of the rural habitation and the likely public cost of extending grid power.

17. Harnessing investment for building the infrastructure to supply energy to the poor in rural areas continues to be a problem. The governments should accept the responsibility for extending energy supply to the poor and should have policies that encourage the absorption, in full or in part, of the capital costs of energy infrastructure for supply to the poor. The investments for extending the infrastructure for energy supply to the poor in both urban and rural areas should be borne as part of the socio-economic investment and treated as a sunk cost in calculating energy supply charges for the poor. This is a very pragmatic suggestion to break the vicious circle of poverty and energy consumption and deserves the attention of economic planners of developing countries.

18. The setting up of local resource-based power plants using resources such as biomass can generate large employment opportunities for every megawatt installed, as well as stimulate employment through small industries. Energy distribution companies managed by local people will reduce the operating costs of distribution and can stimulate employment opportunities.

19. As a long-term activity, it is necessary to take up systematic decentralized planning to provide clean, sustainable, affordable energy to each village based on the optimal choice of fuels and supply sources, including the supply of electricity from the grid. These decentralized energy entities in rural areas should be provided with technical, financial and managerial support by public institutions such as "incubator companies" in the computer industry.

C. Promoting the implementation of a supply- and demand-side energy efficiency programme in the region

20. The use of energy in traditional or even with modern technologies ends up with only a part of the heat values of primary fuels being used effectively, while the rest of the primary energy is wasted. It is generally accepted that approximately two thirds of the primary energy is lost in various stages of conversion, transmission and distribution under conventional technologies.

21. On the supply side, in the fuel industry, especially in the electricity industry, there is enormous scope for efficiency gains at each stage of the supply chain from generation, transmission and distribution. Switching environmentally friendly fuels, such as natural gas, may also reduce the quantity of energy required, if flexibility is available.

22. In order to realize this energy efficiency gain on the demand and supply side, some of the following short-term activities could be taken up:

(a) At the subnational and national levels, efforts should be initiated to improve the awareness of the potential for energy efficiency gain among residential, industrial, transport and agricultural consumers. The understanding and appreciation of the real costs and the potential for saving are obscured by various subsidies for fossil fuels technologies. In each country, the potential and problems of efficiency improvement should be documented and discussed with civil society;

(b) Energy audit for different industries is already available in many countries of the Asian and Pacific region. Where it is not, immediate nationwide energy audit programmes, including establishing proper guidelines for energy audit, could be launched in energy-intensive industries. The results of these audits should contribute to demand-side management. Rating of appliances and differential tariffs to penalize wasteful use of electricity could be devised;

(c) Private-public and stakeholder partnerships to realize energy efficiency potential should be identified and promoted. The different energy users could get into partnerships in developing projects such as captive collective power plants to take advantage of economies of scale and reduce environmental pollution. In some countries, the laws may need revision to make these possible. In the upstream oil and gas industries, cost reduction initiatives should be encouraged through the application of the minimum facilities concept, the sharing of inventories and services.

23. With regard to long-term measures for energy efficiency, there is a need to look at every single industry and examine the potential for shifting over to a new technology which will be more energy-efficient and cause less environmental impact. In the transport sector, in selected cities, replacement of petrol-driven vehicles by vehicles driven on compressed natural gas or electricity could be considered. In the meantime, a reliable and efficient mass transport system needs to be developed. These measures would enhance air quality in large cities in the region.

24. A whole shift is possible towards a much more energy-efficient technology in certain major energy-intensive industries, including the chemical and steel industries, if efforts are backed up by research and development and accepted by the private sector.

D. Promoting the application of renewable and other clean energy technologies in the region

25. The adoption of renewable and other clean energy technologies reduces the adverse environmental impact to near-zero levels and opens up the possibilities of bringing the economic

and social benefits to the rural people. Moreover, if traditional energy use methods were replaced by state-of-the-art energy technologies, employment opportunities would increase in rural areas. In spite of the fact that renewable energy technologies are win-win options, they do not normally receive the attention that they deserve and are seldom adopted because the relative cost benefits become distorted by the explicit and implicit subsidies extended to fossil fuel energy technologies and because of the relatively small size of the technologies. Many of the viable renewable energy technologies have not been adequately popularized and aggressively commercialized for want of institutional arrangements to provide support for such installations at the stages of planning, financing and operating.

26. However, there are several examples within the ESCAP region of countries with successful implementation of projects for renewable and other clean energy technologies. A number of them provide lessons which could be used in the adoption of nationwide micro-sized energy projects which have broad social acceptance by communities. Some countries of the region have registered good progress in introducing renewable and other clean energy technologies through appropriate institutional arrangements.

27. The increasing cost of oil-based power and the poor quality of electricity supply through the grid has given a boost to renewable technology in rural areas. While it is necessary to overcome the complexities related to the Clean Development Mechanism under the Kyoto Protocol to the United Nations Framework Convention on Climate Change, it has drawn the attention of many countries of the region towards the promotion of renewable and other clean energy technologies that reduce greenhouse gas emissions.

28. Now is the appropriate time to take up the specific activities that would promote renewable and other clean energy technologies. The short-term activities should include the following:

(a) Identifying, through a comprehensive survey and consultation of needs and resources, the renewable and other clean energy technologies that are relevant to specific areas in each country and to specific sectors;

(b) Involving local communities, non-governmental organizations and women's groups in the planning and implementation, management and evaluation of energy projects;

(c) Reviewing energy pricing policies and gradually reducing the subsidies on fossil fuels;

(d) Promoting the adoption of decentralized energy systems for lighting, cooking and small (agro) industrial motive power through joint ventures with private-public participation;

(e) Encouraging commercial banks in the public and private sector so that they will provide funding for small renewable and other clean energy projects through "line of credit" arrangements provided by international financial institutions;

(f) Promoting enhanced technical cooperation among countries of the region. Some of the countries in the region have expertise and experience (technological and promotional) in some renewable and other clean energy technologies; these should be carefully identified and their assistance sought for technology transfer;

(g) Encouraging energy service companies to provide managerial and operational support for microlevel energy installations by households and small industries.

29. The measures required for long-term activities include:

(a) A review of energy-pricing policies with a view to gradually reducing all subsidies across the board and to depoliticizing the fixing of energy prices by setting up independent regulatory bodies or agencies over a definite time frame. It may be noted here that, as long as poverty continues, there will be a need to extend some well-focused and targeted subsidies to the

poor to enable them to meet their minimum energy needs. But such subsidies have to be arranged in ways that do not disturb the possibilities for a level playing field in the energy market;

(b) Appropriate institutional arrangements have to be designed and established with nationwide coverage and in partnership with all the stakeholders to support the renewable energy-based technologies irrespective of scale.

E. Promoting and assisting a dedicated global project to create 100 per cent renewable energy in the small island developing states of the region

30. The ESCAP region has a number of small islands scattered in the Pacific region with several unique problems. The ecology of these small island developing countries is very fragile. The unique problems of these countries were discussed at the Global Conference on the Sustainable Development of Small Island Developing States, held in Barbados in 1994, and a Programme of Action for the Sustainable Development of Small Island Developing States was evolved. This affirmed that the sustainable development of these small states was both essential and achievable.

31. In August 2000, in Kitakyushu, while reviewing the progress on the Barbados Programme of Action, governments asserted that climate change remained their urgent and primary concern. While the Kyoto Protocol was assisting in a small measure to cope with climate change problems, it was urged that programmes should be organized to assist small island developing countries to reduce biomass consumption and fossil fuel. All possible technologies should be investigated for feasibility and promoted where appropriate to rational circumstances, with due consideration of available resources.

32. In the short term, it would be useful to initiate all the required surveys and studies and to prepare a feasibility report in a "bankable" format of a master plan for sustainable energy development in the small island developing states.

F. Mobilizing financial resources from traditional sources and the private sector

33. Funding the sustainable development of the energy sectors of the region will be one of the biggest challenges facing the countries themselves and the international community and international private and public financing institutions. Funds will also be required for energy development, energy transport and energy conservation. Infrastructure for the transportation of liquid fuels or natural gas through very large transnational or even transcontinental pipelines or for liquefaction and re-gassification facilities for liquefied natural gas will need heavy investment.

34. The nature of funding will depend on the type of projects, the technology involved, the size of the projects, the sponsoring agency as well as the special needs of the beneficiary population. Historically, most of this funding for the energy sector came from ODA and from international funding agencies such as the World Bank and the Asian Development Bank. While funding for large-scale projects from various sources can be directed to national governments or, with the support and guarantee of national governments, directly to projects, funding for small-scale projects would be possible only through country-level funding agencies under "line of credit" arrangements under softer terms.

35. In addition to ODA, the role of public and private investment is also of crucial importance to promote sustainable energy development. Considering the fact that most developing countries do not have institutional structures and are not adequately prepared to deal with the scale of risks associated with major energy investments, there is a need to expand existing international mechanisms or develop new mechanisms to identify risks and ensure that they are managed on a transparent basis and shared equitably between investors and host countries.

36. In order to fund innovative small and medium-sized energy projects, local venture capital funds need to be set up. These venture capital funds could mobilize resources from the domestic and international private sector and make equity capital available to small and medium-sized projects and entrepreneurs.

37. Philanthropic institutions could also take up this work. They might set up companies, which could fund ecologically sound and economically viable projects. They might also extend small grants towards project formulation.

38. The Global Environment Facility (GEF) has helped some countries in the region. A wider spread of GEF funds could be achieved only by making the procedures of appraisal of projects by GEF more "user friendly". There is also a need to consider setting up a funding mechanism at the regional level, that would have more flexibility to address energy projects. The fund should appraise projects according to the three objectives of sustainable energy development. It should examine (a) whether the project helps the poorer sections of the population by direct and indirect contribution; (b) whether it uses less energy than other projects to receive the same level of benefit; and (c) whether each additional unit of energy used produces less environmental impact.

39. There is a need to enhance the capacity of the developing countries in carrying out considerable preparatory work within the country in order to obtain funds from institutions and the private sector. The most important step is to have tariffs and prices fixed through independent regulatory bodies and agencies. The management of the energy industry should be professionalized. Government, however, could keep strategic control over energy security and the supply of the lifeline needs of energy of the poor.

III. TOOLS FOR IMPLEMENTATION

40. Action in the different priority areas for sustainable energy development could be undertaken using certain tools which are common to all areas. Some of the tools might be of relevance at the national level, while some may be useful for action at the subregional, regional or global levels.

41. The important tools for implementation, which we will discuss below, are the following: policy formulation and planning; strategic environmental management; governance, institutions and capacity-building; legislative and fiscal arrangements; technology networking and transfer; environmental and energy education, information, public awareness and training towards sustainable development; poverty alleviation, and regional cooperation and energy trade.

A. Policy formulation and planning

42. The urgent need for action towards sustainable energy development is well recognized. In the normal course of events, these concerns should be incorporated in national economic plans, but in recent times the trend towards marketization and globalization has considerably reduced the emphasis on planning at the national level. Sustainable energy development requires a long-term view of energy and related sectors. Considerations of arranging for a more reliable supply of needed energy nationwide and its equitable distribution among segments of society will have to be incorporated in sustainable energy development plans. Plans for all other sectors should reflect concerns for environmental protection, poverty alleviation and energy conservation. These should, however, be indicative plans with scope for market-driven decision in all investments.

B. Strategic environmental management

43. This is a policy tool to manage environmental quality. This should set in motion a process to turn the long-term vision of sustainable development into a set of actions involving different sectors and segments of the society. Each problem in each area would be analysed against a background of overall economic, ecological and social considerations. The strategic management approach would

seek partners and supporters from all segments of society by information dissemination for public awareness of the goals of the strategic planning.

C. Governance, institutions and capacity-building

44. In sustainable energy development, it will be difficult to achieve any success unless there is delineation of powers and devolution of resources to subnational and local levels. Several of the actions discussed are relevant at the local level and increased opportunities have to be created to get them examined, approved, implemented, monitored and managed at the same level.

45. Existing institutions need to be revamped or new institutions set up to regulate and develop the energy sector with specific concerns for sustainable energy development. Institutional development efforts should include the development of the capacity of the human resources in these institutions. The regulatory staff have to be trained in the skills of welfare economics, social cost-benefit analysis and tariff fixation.

46. The efforts needed for capacity-building for sustainable energy development are considerable and cannot be managed by a single country. Some of the centres could be identified as regional centres for training. Needless to say, levels of achievement and experience in different countries may be the criteria for designating the centres of excellence in different areas for action.

D. Legislative and fiscal arrangements

47. The legal structures of most countries for governance of the energy sector are designed to protect and regulate the public sector monopolies. These have to be amended or replaced by legislation to allow private sector participation and to promote competition, which is the key to increased efficiency. Similarly, taxes and subsidies should be reviewed, where appropriate, to promote renewable and environmentally sound technologies.

E. Technology networking and transfer

48. In some countries, a large pool of manpower working in the energy sector with adequate technical or managerial backgrounds already exists. These persons could be retained to become trainers for sustainable energy development training to be given to others. As the skills available in some countries may be useful to other countries, technology networking and transfer could play an important role. Recent technological innovations in information technology make it possible for network partners to interact at extremely low cost. Information sharing and discussions could be done over the Internet. The transfer of technology in the renewable energy and clean fossil fuel technologies through such networks should be encouraged by international and regional cooperation.

49. In order to achieve the objective "Transfer of technology in the field of renewable sources of energy", there is a need to strengthen the existing mechanisms in the United Nations, including in particular the Asian and Pacific Centre for Transfer of Technology. Such an arrangement should have the following objectives:

(i) Organizing a data bank on renewable energy application technologies;

(ii) Training of experts;

(iii) Transfer of technology (with the target of expanding renewable energy applications and cost reduction);

(iv) Facilitating free exchange of international information on renewable energy technology.

50. The required funds for the proposed arrangement should be provided through the funds available to the United Nations.

F. Environmental and energy education, information, public awareness and training towards sustainable development

51. Most of the problems of the sustainable energy development sector arise from a lack of public awareness of the consequences of environmental degradation and the associated overall long-term social costs and short-term health impacts. If the regional action programme for 2001-2005 is to have the full support of all sections of the society, these should all be educated. Schoolchildren, teachers, government officials, industrial managers, housewives and the general public have to become aware of the dimensions of the pollution problem in their country and locality. Environmental and energy-related subjects should be incorporated in the school curriculum for primary and secondary levels, and environmental and energy information and communication should be widely disseminated through the mass media. Frequent discussions and seminars have to be organized for the different stakeholders to discuss the issues involved in sustainable energy development as applicable to them. This could be facilitated by preparing and issuing papers, information brochures and technology pamphlets relevant to different areas of action. Such literature could be produced at a central place and made available to all country institutions. In recent times, television has penetrated even the remote villages. This could be used as a medium for dissemination of information on sustainable energy development.

G. Poverty alleviation

52. The overarching concern, which should permeate the examination of each issue under sustainable energy development, the selection of each project and the formulation of each policy in this area, is poverty alleviation. At every step, as we move towards sustainable energy development, its linkage with poverty alleviation measures should be established. Projects which could make a positive contribution towards poverty alleviation should be given priority and projects should be selected which ensure efficient energy consumption with the least cost and with minimum environmental degradation. Strategies will have to be devised whereby the production and distribution of energy become a key instrument for poverty alleviation.

H. Regional cooperation and energy trade

53. In order to enhance the planning capacity of each country, it is essential to take advantage of the expertise and experience gained in other countries of the region. Increased intercountry participation and exchange of expertise and training programmes organized by institutions either individually or jointly should be facilitated including through, inter alia, modalities of technical cooperation among developing countries, a tripartite arrangement involving the active participation of the developed countries and international donor institutions.

54. Country plans may seek out possibilities for building up partnership for the sharing and/or trade of energy resources and transfer of technology. Such activities could be actively facilitated by subregional organizations in partnership with international financing institutions.

IV. CONCLUSIONS

55. The urgent need for positive action towards sustainable energy has been recognized. The areas of action and tools for implementation have been identified. Many of them are cost-effective today, but some may need more research and development efforts. The time has come to set in motion, after careful consideration of alternatives, national plans of action for sustainable energy development which provide for competitive growth of energy supply industries to serve all sections of the community, particularly the impoverished sector, with the help of regional and international organizations. The objective of sustainable energy development is achievable and we can start today to move towards it.

Annex II

BALI DECLARATION ON ASIA-PACIFIC PERSPECTIVES ON ENERGY AND SUSTAINABLE DEVELOPMENT

SUMMARY

This document contains the Bali Declaration on Asia-Pacific Perspectives on Energy and Sustainable Development, adopted by the Meeting. The document contains eight priority areas of particular concern to the Asian and Pacific region: accessibility of energy, renewable energy, rural energy, energy efficiency, mobilization of financial resources, technology transfer, market reform and energy pricing, and international and regional cooperation and assistance. The Bali Declaration defines the regional sustainable energy development goal and calls for concerted action, policy measures and regional and international cooperation towards its achievement. The Declaration will serve as the regional input to the ninth session of the Commission on Sustainable Development, scheduled to be held in New York in April 2001.

BALI DECLARATION ON ASIA-PACIFIC PERSPECTIVES ON ENERGY AND SUSTAINABLE DEVELOPMENT

We, the Ministers and the heads of delegations of members and associate members of the Economic and Social Commission for Asia and the Pacific, convening at the High-level Regional Meeting on Energy for Sustainable Development, in Bali, Indonesia, on 23 and 24 November 2000,

Noting Economic and Social Council resolution 1999/60 of 30 July 1999 on preparations for the ninth session of the Commission on Sustainable Development, on energy issues, in which the Council called upon governments to actively participate and contribute to the preparatory process, and that the Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development, held in New York in March 2000, recognized the need for the active exchange of information on energy and sustainable development leading to the ninth session of the Commission;

Noting further that the Economic and Social Commission for Asia and the Pacific, at its fifty-sixth session, held in June 2000, attached great importance to the ninth session of the Commission on Sustainable Development, which would review and assess the issues in the implementation of energy for sustainable development in the context of Agenda 21, and recommended that the ESCAP region should provide valuable input to the discussion at the ninth session of the Commission;

Recalling the regional action programme adopted by the Ministers attending the Ministerial Conference on Environment and Development in Asia and the Pacific, 2000, held in Kitakyushu, Japan, on 4 and 5 September 2000, which contains a programme area on sustainable energy development;

Noting finally that the Preparatory Meeting of Senior Officials on Sustainable Energy Development held in Bali, Indonesia on 21 and 22 November 2000 outlined specific activities to attain a sustainable energy development path;

Make the following declaration for submission to the Commission on Sustainable Development at its ninth session outlining the regional perspectives comprising the concerns, needs and priorities specific to the Asian and Pacific situation:

1. Energy is a crucial input to economic and social development. Sustainable energy development will also contribute to poverty alleviation. The Asian and Pacific region, particularly the developing countries, will require more energy supplies and services to meet the basic needs and to improve the quality of life of its people. However, high energy consumption patterns and high energy demand growth, together with the high levels of energy demanded by developed countries, would cause a deterioration of the environment if the current pattern of unsustainable production, inefficient distribution and use of energy continued worldwide. It is important to take cognizance of the need to minimize the environmental impacts of these current patterns.

2. The energy demand and supply situation in the Asian and Pacific region varies widely across the region. The vast majority of the people live in rural areas without access to commercial energy and depend heavily on traditional sources of energy. The region also has the largest number of megacities, where air pollution poses increasing health hazards and, at the same time, the poor do not have access to adequate modern energy services. In small island countries, air pollution and natural hazards are the main causes of the health risks. To enhance more equitable supply and servicing of energy to these people, it is extremely important to bring commercial energy supplies to the urban poor and rural areas.

3. Many countries, while trying to increase energy supplies, have made considerable efforts to minimize the environmental impacts, but more effort is needed to promote energy development and consumption in a sustainable manner. Many key issues need to be resolved and constraints will

have to be removed, taking into consideration the needs and priorities specific to the Asian and Pacific region, in particular those of developing countries.

4. We consider capacity-building and transfer of technology to be the most important cross-cutting issues that should be taken into account in addressing all key issues identified.

5. We therefore seek to undertake to enhance the capacity of concerned stakeholders in developing sustainable energy development strategies by which energy services can be expanded and improved with a minimum impact on environmental quality. We propose to take appropriate steps to strengthen the policies, planning and management of the strategic energy sector, including its integration with economic, social and environmental policies. We shall promote effective partnership of all stakeholders through, inter alia, the strengthening of public awareness and the creation of an enabling environment for investment.

6. In realizing our commitments, we identify the following priority areas that need attention at the national, regional and international level:

A. Accessibility of energy

(1) The vast majority of the poor are unable to pay for their essential energy needs. They depend heavily on traditional sources of energy such as biomass and use of inefficient methods. The energy needs of the poor in the urban and rural areas will have to be met through a mix of commercial and traditional energy resources depending on needs, local conditions and resource availability.

(2) We resolve to take accelerated action and initiatives to widen the access of energy services to our disadvantaged groups of population. We urge all agencies, communities and other stakeholders to participate actively in the implementation of programmes.

B. Renewable energy

Although there is enormous potential for modern renewable energy technology development in the Asian and Pacific region, its contribution to the overall energy supply remains low. It is recognized that renewable energy sources, particularly through the increased use of modern technologies, could play a key role in enhancing energy supplies, particularly in the rural areas of the Asian and Pacific region. To that effect, we will strive to initiate policies and strategies to focus on and facilitate the optimal commercial exploitation of renewable energy resources. For the promotion and diffusion of renewable energy technologies, we will also encourage in-country technology development, local manufacturing and transfer, as well as the facilitation of technology transfer between countries. We recognize the need for enhanced efforts to create an enabling environment for greater private sector participation and a strong public-private partnership.

C. Rural energy

(1) Most of the rural areas in the region lack adequate supplies of commercial energy for household, community and productive use in agriculture and industries. A majority of the rural population uses fuels such as fuel wood, crop residue and animal dung. In all the developing countries of the Asian and Pacific region, the use of traditional fuels for cooking and kerosene for lighting is the norm. The use of these resources with inefficient technologies causes indoor air pollution and has a negative impact on health, in particular on women and children. Although electricity is the preferred energy for lighting, a large section of the population in many developing countries does not have access to electricity owing to the lack of infrastructure in their area.

(2) We are convinced that the problem of rural energy can be solved by widening the commercial energy base and, in that respect, we shall adopt an appropriate policy and strategies to accelerate rural electrification and the exploitation of available renewable and other energy resources with the involvement of local communities.

D. Energy efficiency

(1) There is considerable scope for improving efficiency in the production, conversion, transmission, distribution and usage of energy in the developing countries of the region. All concerned need to strive to obtain the full benefit of energy efficiency and cost-cutting initiatives throughout the energy cycle. Wastage needs to be minimized in the industry, household, commercial, transport and agriculture sectors. To this end, we shall formulate and implement energy efficiency policies to change the production and consumption pattern and take coordinated action towards cost-effectiveness, economic efficiency and environmental sustainability.

(2) All opportunities for enhancing energy efficiency in industrial production, domestic use, in buildings and in transport have to be identified and pursued. Energy efficiency will be sought through energy efficiency audits, promoting and where appropriate mandating minimum required energy for all important industries suitably phased depending on individual country requirements. All electrical equipment, including all household appliances, could be subjected to energy labelling. Similarly, in the transport sector, in order to minimize urban air pollution, minimum required fuel rating and emission standards could be established. In all these efforts, the cooperation and active participation of machinery manufacturers and consumer associations should be sought. We shall undertake to enable all energy efficiency measures to be put in place through appropriate national-level policies, including the enactment of comprehensive legislation for this purpose.

(3) All means of increasing energy efficiency and reducing pollution will be explored, including switching to natural gas and other environmentally friendly fuels. All forms of new and renewable energy, such as biomass, solar, wind, hydro, geothermal and energy carriers, should be exploited, with due consideration being paid to availability of resources and local conditions. The potential of natural gas in the region to minimize environmental impact needs to be explored.

E. Mobilization of financial resources

(1) The flow of international assistance to the Asian and Pacific region is inadequate. There is a need for strong international public and private financial and technical assistance for the effective implementation of national policies and programmes aimed at sustainable energy development, particularly in developing countries.

(2) Financing is the most important issue in the promotion of increased utilization of energy. New and appropriate methods need to be explored for mobilizing financing through financial institutions and the private sector, including the provision of rural credit, credit for working capital and marketing activities, as well as for removing all the bottlenecks impeding the flow of funds.

(3) Private and public sector financing as part of innovative financing for sustainable energy plays a significant role to guarantee accessible and affordable energy services for all people, particularly those in developing countries. Considering the fact that most developing countries do not have institutional structures that are adequately prepared to deal with the scale of risks associated with major energy investments, there is a need to expand existing international mechanisms or develop new mechanism to identify risks and ensure they are managed on a transparent basis and with an effective and equitable partnership between investors and host countries.

(4) We urge developed countries to honour their commitments made at the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992, in terms of official development assistance and technology transfer. We support the early replenishment of concession funds in international financial institutions. We feel strongly that there is a need for new and additional financing mechanisms and devising financial incentives to encourage private sector investment to promote sustainable energy development. In that respect, we urge the developed countries to provide additional financial and other resources to developing countries, and at the same time, we support the use of innovative and special financing for the implementation of sustainable energy development plans.

F. Technology transfer

A major area of concern in the region is the inadequate technology transfer in the area of both advanced clean fossil fuel technologies and new and renewable energy technologies. In order to implement sustainable energy production and consumption policies, access to and the transfer of environmentally sound technologies and corresponding know-how are important. The requisite technology is available, mostly in the developed countries but also in some developing countries. We urge all concerned to facilitate and finance technology transfer on favourable terms in line with Agenda 21. In order to achieve the above-mentioned objective, there is a need to strengthen the existing mechanism and the United Nations involvement.

G. Market reform and energy pricing

(1) Where an appropriate market mechanism is established to attract investment, the public interest must be ensured by maintaining the prices at affordable and acceptable levels by safeguarding the protection of the environment.

(2) Most countries of the region have been undertaking various forms of restructuring and reform in the energy sector. These market-oriented mechanisms should be encouraged.

(3) The existing structure of subsidies in many countries distorts the market in favour of conventional energy and discourages the penetration of renewable energy and energy efficiency initiatives. We will aim to target subsidies carefully for the benefit of the poor and for the promotion of sustainable energy and to phase them out gradually over the long term.

H. International and regional cooperation and assistance

(1) While we fully recognize the importance of promoting sustainable energy development and will endeavour to make our best efforts in undertaking all possible measures towards its implementation, it is imperative that the international community provides the necessary assistance in our efforts by enhancing national capacity, mobilizing financial resources and facilitating technology transfer. We are confident that, with cooperation and assistance at all levels, we will be able to fulfil our commitments.

(2) In many parts of the region, a considerable potential exists for intraregional cooperation in joint trans-boundary energy sector, infrastructure development and energy trade. Establishment of new grid connections and the extension of the available one between countries of the ESCAP region, where appropriate, in order to promote electricity trade should be facilitated. To actualize this potential, it is essential that the developed countries and international donor institutions assist developing countries of the region in their efforts to enhance technical cooperation in the field of energy. For example, the diffusion of experiences of developing countries of the region in the field of renewable energy and energy efficiency should be encouraged through regional cooperation.

(3) We recognize the urgent need to improve the development and production activities of hydrocarbon fields through integrated cost reduction, more efficient arrangements and the application of appropriate technology. In this regard, we call on the concerned countries in the region and international organizations, as well as relevant stakeholders, to promote cooperation in this area.

(4) We urge all concerned United Nations funding bodies and programmes, regional commissions, specialized agencies, governmental and non-governmental organizations, international and regional institutions, civil society, funding agencies and donor countries, as well as the private sector, to assist and support our efforts to attain our sustainable energy development goals.

Adopted on 24 November 2000, in Bali, Indonesia